

## Performing the Geotechnical Field Investigation



David Thomas, Sr. Engineering Geologist  
Office of Drilling Services

## Drilling Request Submittal

- Contact Drilling Services (DS) and arrange for a drill site preview
- You may also want to invite the Project Engineer and District rep's from environmental, maintenance, etc.

<input type="checkbox"/> PRELIMINARY <input type="checkbox"/> FINAL		<b>DRILLING REQUEST</b> OFFICE OF DRILLING SERVICES		Date _____	
Instructions: Please complete this form and submit to Laurel Jensen (916) 227-4407 Fax # (916) 227-5432					
Geologist / Engineer Telephone No. _____		Senior Geologist / Engineer Signature _____ Telephone No. _____			
PROJECT INFORMATION Geographic Name / Bridge Name _____		District _____	County _____	Route _____	Post Mile / KP _____
EA No. _____	FA - Activity Code _____	Special Des _____	Requested Start Date _____	Drilling Completed by Date _____	
<b>DRILLING AND SAMPLING NEEDS</b>					
<input type="checkbox"/> Hub Core (2.400") <input type="checkbox"/> Hub Core (1.675")		<input type="checkbox"/> Punch Core <input type="checkbox"/> 2 1/2" Brass <input type="checkbox"/> 2" Brass		<input type="checkbox"/> Auger Boring <input type="checkbox"/> SPT <input type="checkbox"/> Shelby Tube <input type="checkbox"/> California Modified	
est. qty: _____		est. qty: _____		Drilling Phase: _____ Est. # Borings: _____ Est. Max Depth: _____	
<input type="checkbox"/> Hydraulic Drive Rig <input type="checkbox"/> 1" Soil Tube (Wacker) <input type="checkbox"/> Other _____					
Expected Rock / Soil Type(s): _____					
<b>SITE CONSTRAINTS</b>			<b>LOCAL MAINTENANCE YARD</b>		
Permit-to-Enter: <input type="checkbox"/> Yes <input type="checkbox"/> No Environmental Permits: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> F & G <input type="checkbox"/> Army Corp <input type="checkbox"/> USFWS <input type="checkbox"/> Other(s) _____			Construction Support <input type="checkbox"/> Maintenance Support <input type="checkbox"/> Name: _____ Contact Person: _____ Phone No: _____ Cell No: _____ Lane Closure <input type="checkbox"/> Shoulder Closure <input type="checkbox"/> Bridge Deck <input type="checkbox"/>		
Remarks _____ _____ _____ _____ _____					
<b>INSTALLATIONS</b>					
Est. # SI Borings: _____ <input type="checkbox"/> 3.34" Geo-Lok est. qty(ft): _____ <input type="checkbox"/> 2.75" Geo-Lok est. qty(ft): _____ TDR Cable <input type="checkbox"/> 18 gauge est. qty(ft): _____ <input type="checkbox"/> 0.5" est. qty(ft): _____ Casing Backfill <input type="checkbox"/> Cement-Bentonite Grout <input type="checkbox"/> No. 8 Sand		Est. # Piezo Borings: _____ Slotted (200) PVC Sch 80 <input type="checkbox"/> 4" est. qty(ft): _____ <input type="checkbox"/> 1.5" est. qty(ft): _____ <input type="checkbox"/> 1" est. qty(ft): _____ Solid PVC Sch 80 <input type="checkbox"/> 6" est. qty(ft): _____ <input type="checkbox"/> 4" est. qty(ft): _____ <input type="checkbox"/> 3" est. qty(ft): _____ <input type="checkbox"/> 1.5" est. qty(ft): _____ <input type="checkbox"/> 1" est. qty(ft): _____		Monuments (qty) <input type="checkbox"/> 1" Flush Mount <input type="checkbox"/> 2" Flush Mount <input type="checkbox"/> 4" Flush Mount <input type="checkbox"/> 4.5" Locking <input type="checkbox"/> 5.5" Locking <input type="checkbox"/> 6" Locking	
LJ _____ DJD _____ WT _____ JAR _____ Jobs Rec'd _____ Completed Project _____ Rev. 12/05 Drilling Plan Package (1 of 3) Received Date: _____					

## The Drilling Request

(the more information the better)

## The Drilling Request

(The Basics)

GS Whoever (XXX) XXX-XXXX Geologist / Engineer Telephone No.		Signature Please (XXX) XXX-XXXX Senior Geologist / Engineer Signature Telephone No.	
PROJECT INFORMATION <b>Dry Creek Bridge (REP) No. 51-0999</b> Geographic Name / Bridge Name		District <b>05</b>	County <b>SB</b>
		Route <b>2</b>	Post Mile / KP <b>PM33.63</b>
<b>05-#####1</b> EA No.	<b>1-240</b> FA - Activity Code	<b>MSA P80</b> Special Des	(Earliest) Requested Start Date
			(Latest) Drilling Completed by Date

## The Drilling Request (Drilling and Sampling Needs)

### Dry Creek Bridge (REP)

DRILLING AND SAMPLING NEEDS			
<input checked="" type="checkbox"/> Hxb Core (2.400") <input type="checkbox"/> Nxb Core (1.875")	<input checked="" type="checkbox"/> Punch Core <input checked="" type="checkbox"/> 2 1/2" Brass est. qty: _____	<input type="checkbox"/> Auger Boring [____] <input type="checkbox"/> 2" Brass est. qty: _____	Drive / Push Samples <input checked="" type="checkbox"/> SPT <input type="checkbox"/> Shelby Tube <input type="checkbox"/> California Modified
<input type="checkbox"/> Hydraulic Drive Rig <input type="checkbox"/> 1" Soil Tube (Wacker) <input type="checkbox"/> Other _____			
Expected Rock / Soil Type(s): <u>Silt / Sand / Sandstone Bedrock</u>			
<div style="display: flex; justify-content: space-between;"> <span>Drilling Phase: _____</span> <span>Est. # Borings: <u>4</u></span> </div> <div style="display: flex; justify-content: space-between;"> <span>Est. Max Depth: <u>100 ft</u></span> </div>			

## The Drilling Request (Constraints / Remarks)

### Dry Creek Bridge (REP)

SITE CONSTRAINTS	LOCAL MAINTENANCE YARD
Permit-to-Enter: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Environmental Permits: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> F & G <input type="checkbox"/> Army Corp <input type="checkbox"/> USFWS <input checked="" type="checkbox"/> Other(s)	Construction Support <input type="checkbox"/> Maintenance Support <input checked="" type="checkbox"/> Name: <u>Lost Creek</u> Contact Person: <u>Yard Sup</u> Phone No: (XXX) XXX-XXXX   Cell No: (XXX) XXX-XXXX
Lane Closure <input type="checkbox"/> Shoulder Closure <input type="checkbox"/> Bridge Deck <input type="checkbox"/>	
Remarks <u>3 borings are outside of Caltrans right-of-way. 2 borings are below the high water mark and within, or adjacent to sensitive wetland habitat. Creek flows year round. County operated check dam upstream.</u>	

## The Drilling Request (Installations)

### Dry Creek Bridge (REP)

INSTALLATIONS			
<b>Est. # SI Borings:</b> _____  <input type="checkbox"/> 3.34" Geo-Lok    est. qty(ft): _____ <input type="checkbox"/> 2.75" Geo-Lok    est. qty(ft): _____  <b>TDR Cable</b> <input type="checkbox"/> 18 gauge    est. qty(ft): _____ <input type="checkbox"/> 0.5"    est. qty(ft): _____  <b>Casing Backfill</b> <input checked="" type="checkbox"/> Cement-Bentonite Grout <input checked="" type="checkbox"/> No. 8 Sand	<b>Est. # Piezo Borings:</b> 1 _____  <b>Slotted (.020) PVC Sch 80</b> <input type="checkbox"/> 4"    est. qty(ft): _____ <input checked="" type="checkbox"/> 1.5"    est. qty(ft):    20 <input type="checkbox"/> 1"    est. qty(ft): _____	<b>Monuments    (qty)</b> <input type="checkbox"/> 5" Flush Mount _____ <input type="checkbox"/> 4" Flush Mount _____ <input type="checkbox"/> 2" Flush Mount _____ <input checked="" type="checkbox"/> 4.5" Locking    1 <input type="checkbox"/> 5.5" Locking _____ <input type="checkbox"/> 6" Locking _____	
<b>Solid PVC Sch 80</b> <input type="checkbox"/> 6"    est. qty(ft): _____ <input type="checkbox"/> 4"    est. qty(ft): _____ <input type="checkbox"/> 3"    est. qty(ft): _____ <input type="checkbox"/> 1.5"    est. qty(ft):    10 <input type="checkbox"/> 1"    est. qty(ft): _____			

## Site Safety Plan (The Basics)

<b>GS Whoever</b> (xxx) xxx-xxxx Geologist / Engineer    Telephone No.		<b>Please Sign</b> (xxx) xxx-xxxx Senior Geologist / Engineer    Signature    Telephone No.	
<b>PROJECT INFORMATION</b> Dry Creek Bridge (REP) No. 51-0999		District 05	County SB
Geographic Name / Bridge Name		Route 2	Post Mile / KP PM 33.63
05-####1 E.A. No.	1-240 FA - Activity Code	MSA P80 Special Designation	

## Site Safety Plan (Hospital / Cell Reception / Physical Hazards)

### Dry Creek Bridge (REP)

Local Hospital	<input checked="" type="checkbox"/> Basic Emergency	<input type="checkbox"/> Trauma Center	<i>Please attach map with route to hospital from site(s) clearly marked</i>
Name:	Smalltown Community Hospital		
Address:	2929 B Street, Smalltown		
Phone No.:	(XXX) (XXX-XXXX)		
Is there clear Cell Phone reception and transmission at the Site(s)?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown			
Please describe any known Physical Hazards at the Site(s):			
Rattlesnakes			

## Site Safety Plan (Utility Clearance / USA Underground Service Alert)

### Dry Creek Bridge (REP)

UTILITY CLEARANCE (USA) DATA			
USA Ticket No.:	121212	USA Exp. Date:	28 Days from Call
Location Description as Mapped by USA:			
Starting at a point 50 ft south of Dry Creek Bridge, Rte 2 centerline and extending 50 ft. north of Dry Creek Bridge along Rte 2 for a width of 75 ft east of Rte 2 centerline.			
Members Contacted by USA		Did you receive a Member Call-Back?	Did you have a Field Meet with Member?
PG & E Eletrical		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
PG & E Gas Distribution		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
AT & T Fiber Optic		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the Member mark or flag their utilities at the site(s)?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Are there Non-Member Utilities at the Site(s)?		Have you been briefed on the location(s) of Non-Member Utilities at the site(s)?	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Non-Members Contacted:		Are the locations Marked or Flagged?	
		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are there Overhead Utility lines at the Site(s)?			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			

## Clear the Utilities – It's the Law Call 811



Fax			
Attention:	Fax:	Phone:	Ext:
Sender:	Fax:	Phone:	# of pages:

Project Name \_\_\_\_\_ Dist.-Co.-Rte.-PM \_\_\_\_\_ E.A. No. \_\_\_\_\_

Geotechnical Services of the Division of Engineering Services needs to conduct geotechnical and exploratory drilling at this site. A site plan showing the general location of the drilling program is attached. Field operations are tentatively scheduled to start \_\_\_\_\_. The borings (are/are not) anticipated to extend to groundwater.

Project Comments:

### Hazardous Materials/Waste Questionnaire

Response by: \_\_\_\_\_  
Print Name Phone Number

1. Has an initial site assessment been performed for this project? Yes ☐ No ☐ If yes, is the report available and from where?
2. Was the proposed drilling area, as shown on the attached map, identified as having the potential for hazardous waste contamination? Yes ☐ No ☐ If yes, why?
3. If yes, has a detailed site assessment been performed at this location? Yes ☐ No ☐
4. Please briefly describe the results of the detailed site assessment performed at our proposed drill location.
5. Encountering hazardous waste and/or hazardous materials is not ☐, is ☐ anticipated within subsurface materials at this location. If any, please attach a list of specific substances, levels, etc. that are anticipated at this site.

Signed: \_\_\_\_\_ Date: \_\_\_\_\_  
Hazardous Waste Coordinator  
District \_\_\_\_\_ Environmental Branch

Please complete this form to the best of your knowledge and return by FAX by \_\_\_\_\_ to the "sender" listed above. If your answers indicate the area is, or may be, contaminated, you will be contacted for further details.

Rev. 2/19/03 Drilling Plan Package (3 of 3)

ADA Notice For individuals with sensory disabilities, this document is available in alternate format. For information call (916) 243-2841 or TDD (916) 243-2844 or write Records and Form Management, 1100 N Street, Room 1120, SAC 89, Sacramento, CA 95814.

## Hazardous Materials/Waste Query

## Office of Drilling Services

- Drilling Services routinely schedules 8 drill crews per week statewide
- Typically crew size is comprised of 3 to 4 staff, all with CMV license
- Alternate Work Week 4/10's Friday RDO



## Drilling Services Equipment

- (4) 2WD Truck Mounted Drill Rigs
- (5) 4X4 Truck Mounted Drill Rigs
- (5) Trailer Mounted Drill Rigs
- (2) Track Mounted Drill Rigs, (1) w /Horizontal Drilling Capabilities
- (1) All-Terrain (Balloon - Tire) Off-Road Drill Rig
- (2) Trailer Mounted Hydraulic Drive Rigs
- (3) Limited Access Drill Machines







# Geotechnical Drilling and Sampling Methods

## Mud-Rotary

- 94mm Wireline (2.5") – used for recovery of continuous soil (punch core) samples and continuous rock core
- Hxb Wireline (2.4") – used for recovery of continuous rock core
- Nxb Wireline (1.8") – use for recovery of continuous rock core
- Conventional Open-Hole Tri-Cone ( $\leq 10''$  Hole Diameters) – Open Hole / Soil Cuttings and Chip Samples

# Geotechnical Drilling and Sampling Methods



Mud-Rotary Set-Up



## Geotechnical Drilling and Sampling Methods

### Auger

- 8" Hollow-Stem Continuous Flight
- 6" Hollow-Stem Continuous Flight

## Geotechnical Drilling and Sampling Methods

### Hollow-Stem Continuous Flight Auger



## CME750 All-Terrain Rig



## Low-Impact Drilling

CME750 All-Terrain Rig  
with Alturna Mats





## Drilling Services Barge Work

Crane Assisted Assembly

Anchors / Spuds Set



CS500 Aluminum Drill Rig

## Limited Access Drilling



Limited Access Drilling – CS 100 Core Rig

